# Agilent 16800 Series
# Portable Logic Analyzers

**The 16800 Series portable logic analyzers offer advanced measurements for your digital applications – at a price that will fit your budget.**

Agilent Technologies

# Measurements that meet your specific needs – at a price that fits your budget

Agilent Technologies 16800 Series portable logic analyzers offer the performance, applications, and usability your digital development team needs to quickly debug, validate, and optimize your digital system.

## Logic analysis for tracking real-time system operation

Accurately measure precise timing relationships over longer periods of time with 64 K deep, 4 GHz (250 ps) timing zoom. Find anomalies separated in time with memory depths upgradeable to 32 M. You get it all at a price that fits your budget.

| Agilent Model Number | 16801A, 16821A[1] | 16802A, 16822A[1] | 16803A, 16823A[1] | 16804A | 16806A |
|---|---|---|---|---|---|
| Logic analyzer channels | 34 | 68 | 102 | 136 | 204 |
| Pattern generator channels[1] | 48 | 48 | 48 | N/A | N/A |
| High-speed timing zoom | 4 GHz (250 ps) with 64 K depth | 4 GHz (250 ps) with 64 K depth | | | |
| Maximum timing sample rate (Half/full ch) | 1.0 GHz (1.0 ns) / 500 MHz (2.0 ns) | 1.0 GHz (1.0 ns) / 500 MHz (2.0 ns) | | | |
| Maximum state clock rate | 250 MHz with option 250 | 450 MHz with option 500<br>250 MHz with option 250 | | | |
| Maximum state data rate | 250 Mb/s with option 250 | 500 Mb/s with option 500<br>250 Mb/s with option 250 | | | |
| Maximum memory depth | 1 M with option 001<br>4 M with option 004<br>16 M with option 016<br>32 M with option 032 | 1 M with option 001<br>4 M with option 004<br>16 M with option 016<br>32 M with option 032 | | | |
| Supported signal types | Single-ended | Single-ended | | | |
| Automated threshold/sample position<br>Simultaneous eye diagrams, all channels | Yes | Yes | | | |
| Probe compatibility | 40-pin cable connector | 40-pin cable connector | | | |

1 Pattern generator available with 16821A, 16822A and 16823A.

Choose from eight models to get the measurement capability for your specific application

## Pattern generation for functional verification

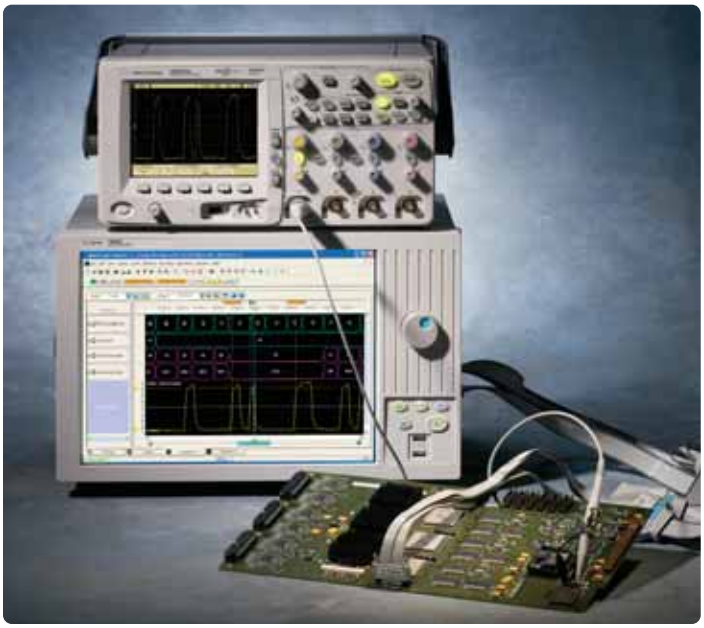
Drive down risk early in product development by replacing missing circuits or boards with digital stimulus. Verify operation across a variety of test conditions with normal or faulty digital patterns at full speed or by stepping through individual states. A logic analyzer with an integrated pattern generator lets you control and monitor real-time system operation.

| Agilent Model Number | 16821A, 16822A, 16823A | |
|---|---|---|
| | **Half Channel** | **Full Channel** |
| Maximum clock | 300 MHz | 180 MHz |
| Data channels | 24 | 48 |
| Memory depth in vectors | 16 M | 8 M |
| Logic levels supported | 5 V TTL, 3-state TTL, 3-state TTL/CMOS, 3-state 1.8 V, 3-state 2.5 V, 3-state 3.3 V, ECL, 5 V PECL, 3.3 V LVPECL, LVDS | |

Models with a built-in pattern generator give you more measurement flexibility

## Accurate measurements start with reliable probing

Agilent offers a wide variety of probing accessories that support your general-purpose and application-specific measurement needs. Agilent consistently delivers the leading edge in probing hardware and techniques to give designers like you access to the very signals that hold the key to your system's problems.



## View Scope for tracking down problems across the analog and digital portions of your design

Easily make time-correlated measurements and maintain marker tracking between your 16800 Series logic analyzer and Agilent 6000 Series or Agilent Infiniium 8000, 54800, DSO80000 Series oscilloscopes with standard View Scope software. A simple physical LAN and BNC connection has you quickly validating signal integrity and timing relationships between analog and digital signals. Import scope waveforms into a single, integrated logic analyzer waveform display for easy viewing and analysis.

# Agilent 16800 Series portable logic analyzers deliver performance, applications, and usability

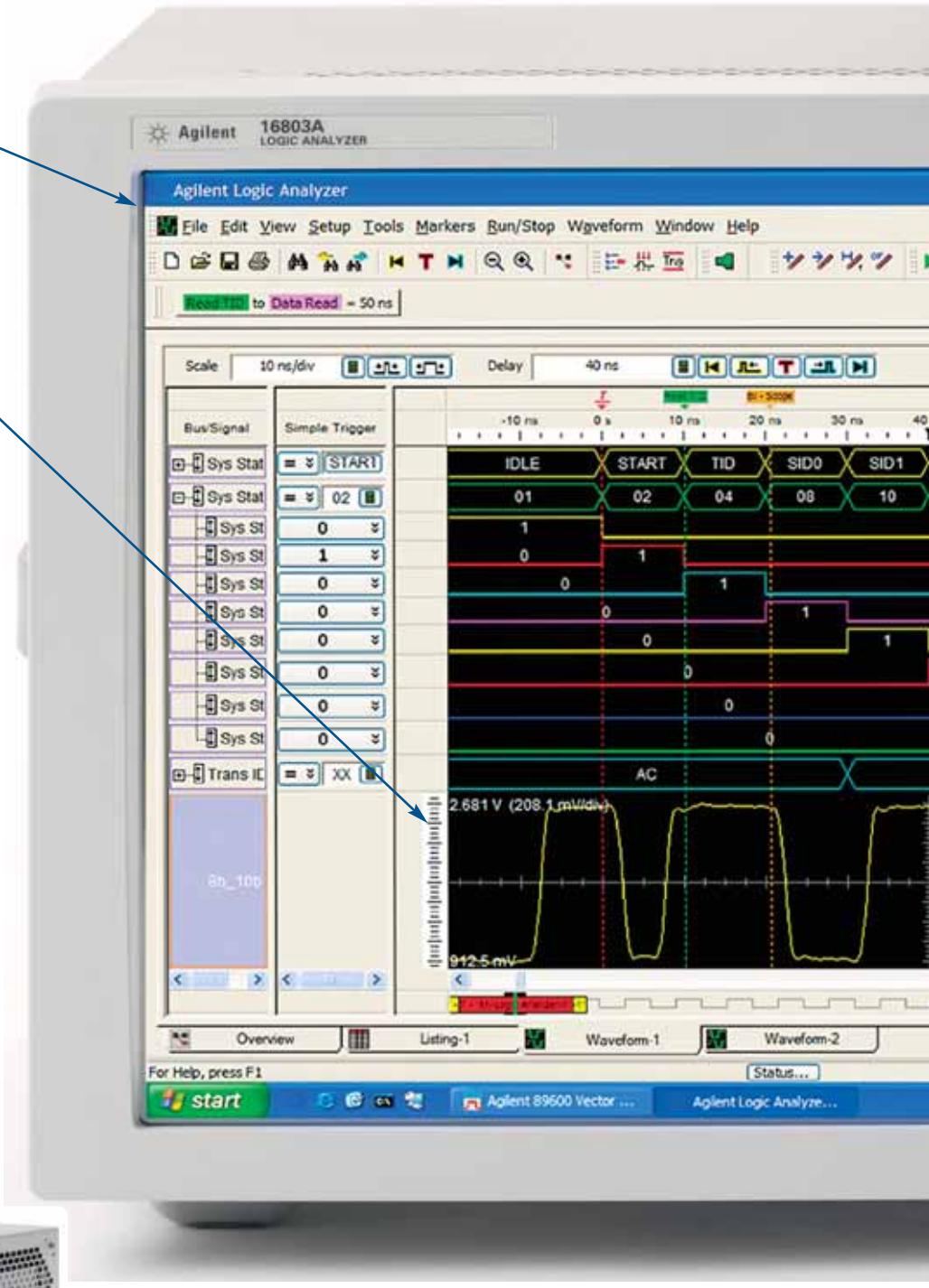
**15-inch color display**, a viewing area more than twice as large as other logic analyzers in its class, allows you to see more data. Viewing relationships between large numbers of signals and buses helps you identify a problem sooner.

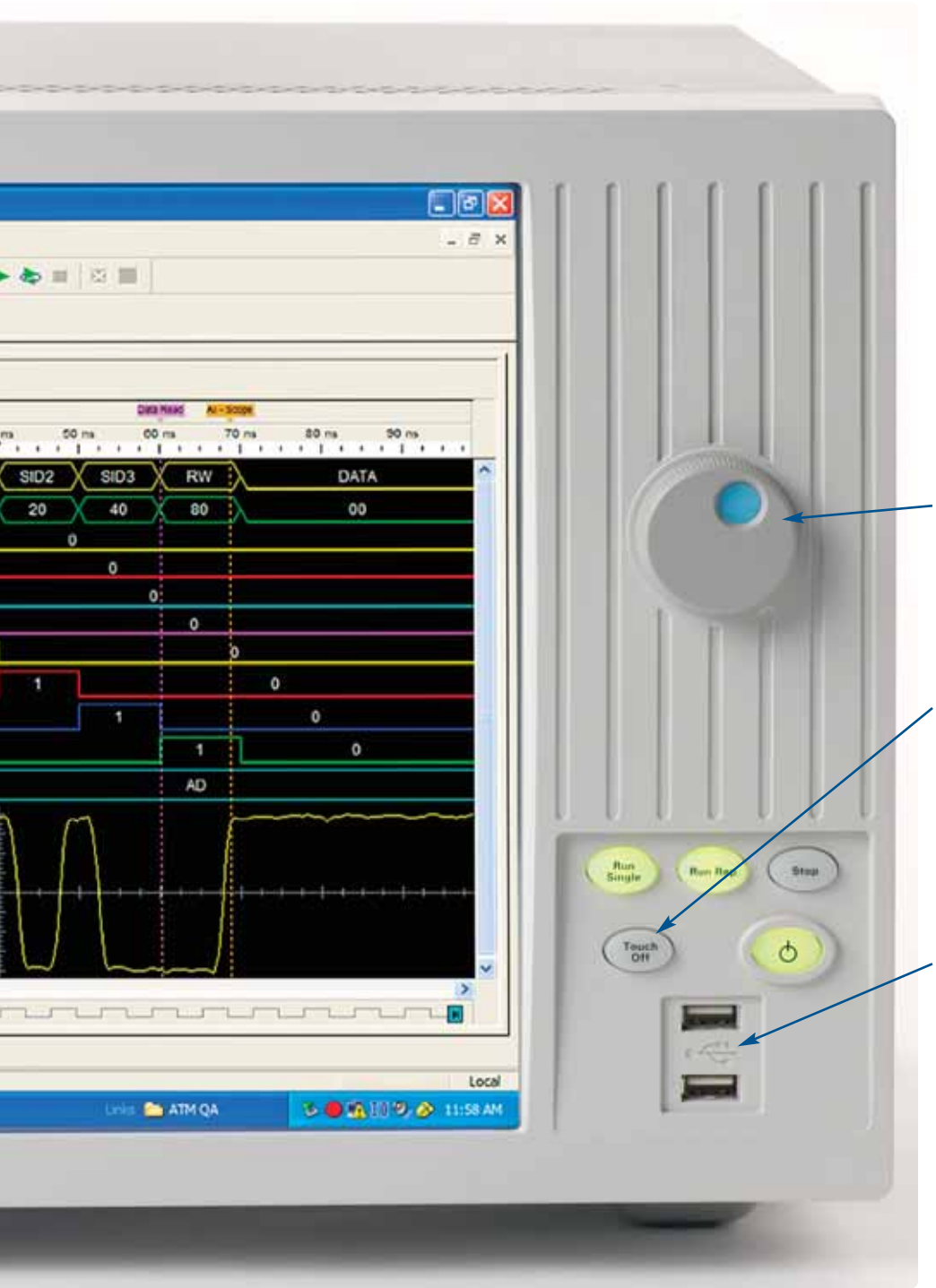
**View Scope** lets you quickly validate signal integrity and timing relationships between analog and digital domains by seamlessly integrating your scope and logic analyzer waveforms into a single display.

Up to **32 M deep memory** for identifying the root cause of a problem and symptom that are widely separated in time

**Built-in 48-channel pattern generator** (16821A, 16822A and 16823A) provides stimulus and response in a single instrument

**34, 68, 102, 136 and 204 channel** logic analyzer configurations offer flexibility for any application or budget

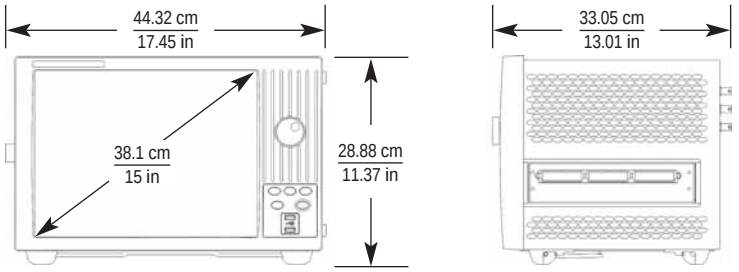





**General-purpose knob** lets you quickly adjust your viewing and measurement parameters. Select a modifiable variable, then turn the knob to quickly step through values for the variable.

Available **touch screen** gives you direct access to all logic analyzer functionality so you can stay focused on your measurement. "Touch Off" key disables the touch screen and allows you to point out anomalies to a colleague without altering the display settings.

**Six 2.0 USB ports**, two in front, four in the rear, let you "hot connect"a mouse, keyboard or USB storage drives.



# Unprecedented insight into your design with multiple views and analysis tools

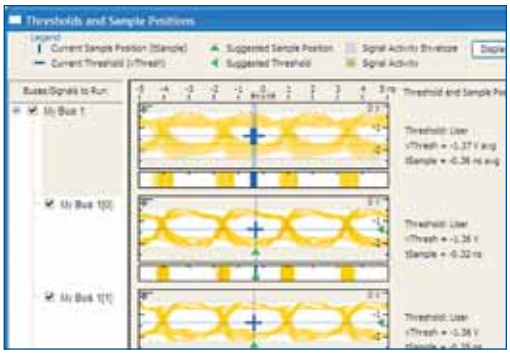
Agilent and our partners provide an extensive range of FPGA, bus, processor and analysis tools to accelerate the debugging process for your specific application. The navigation, data views and analysis features provide instant insights into your system's operation so that you spend your time solving problems, not finding them. Only Agilent can provide you with such an extensive breadth of insight and measurement coverage in a logic analyzer.

## FPGA

Gain visibility into your FPGA's internal activity and get "x-ray vision" into your design. You can automate setup with custom signal names, and measure new groups of signals in seconds – without stopping your FPGA, changing your design, or impacting the timing.

## Digital VSA

Perform in-depth time, frequency, and modulation domain analysis on your digital baseband and IF signals. Agilent's 89600 Vector Signal Analysis software provides flexible tools for making quality RF and modulation measurements on digital communication signals.




## Eye Scan

Identify problem signals quickly by viewing eye diagrams across all buses and signals simultaneously.

# Logic analyzers with performance you can use, priced to fit your budget

## Selecting a logic analyzer to meet your application and budget is as easy as 1, 2, 3

### 1 Choose measurement capability

### 2 Choose the channel count

| | 34 channels | 68 channels | 102 channels | 136 channels | 204 channels |
|---|---|---|---|---|---|
| **Logic analyzer** | 16801A | 16802A | 16803A | 16804A | 16806A |
| **Logic analyzer with 48-channel pattern generator** | 16821A | 16822A | 16823A | – | – |

### 3 Choose the memory depth and state speed

| | |
|---|---|
| **Memory depth** | 1 M: <Model number>-001<br>4 M: <Model number>-004<br>16 M: <Model number>-016<br>32 M: <Model number>-032 |
| **State speeds** | 250 MHz: <Model number>-250<br>450 MHz: <Model number>-500* |

* Applies to 68, 102, 136 and 204 channel models

## Additional Considerations

**Touch screen:** <Model number>-103

### Extend the life of your equipment

Upgrade your 16800 Series logic analyzer by "turning on" additional memory depth and state speed when you need more. Purchase the capability you need now, then upgrade as your needs evolve.

### Probes are ordered separately

Please specify probes when ordering to ensure the correct connection between your logic analyzer, pattern generator, and device under test. See the 16800 Series data sheet (5989-5063EN) for an extensive list of pattern generator clock and data pods. Order any combination and quantity of the following probes for the logic analyzer:

### General purpose flying lead probe

- 17-ch E5383A

### Connector probes

- Mictor: 34-ch E5346A
- Samtec: 34-ch E5385A

### Connectorless probes

- 17-ch E5396A soft touch
- 34-ch E5394A soft touch
- 34-ch E5404A pro-series soft touch

## Related Literature

| Publication Title | Publication Type | Publication Number |
|---|---|---|
| *Agilent 16800 Series Logic Analyzers* | Data sheet | 5989-5063EN |
| *Considerations When Selecting a Logic Analyzer* | Application note | 5989-5138EN |
| *Agilent Technologies 16900 Series Logic Analysis Systems* | Color brochure | 5989-0420EN |
| *Agilent Technologies Measurement Modules for the 16900 Series* | Data sheet | 5989-0422EN |
| *Agilent Technologies B4655A FPGA Dynamic Probe* | Data sheet | 5989-0423EN |
| *Probing Solutions for Agilent Technologies Logic Analyzers* | Catalog | 5968-4632E |
| *Processor and Bus Support for Agilent Technologies Logic Analyzers* | Catalog | 5966-4365E |

## Product Web site

For the most up-to-date and complete application and product information, please visit our product Web site at: **www.agilent.com/find/logic**

### Agilent Open

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Agilent Open simplifies the process of connecting and programming test systems to help engineers design, validate and manufacture electronic products. Agilent offers open connectivity for a broad range of system-ready instruments, open industry software, PC-standard I/O and global support, which are combined to more easily integrate test system development.

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© Agilent Technologies, Inc. 2006
Printed in USA, May 31, 2006
5989-5062EN

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